

A hollow casing mounting sleeve is slidably placed on each of the stuffing horns. See sleeve 30 on horns 14 in FIGS. 1 and 4, and sleeve 30A on horn 14A in FIG. 2. The length of each sleeve spans the distance between the flanges 24 and the discharge ends 26 of each stuffing horn. The sleeves all have an annular flange 32 of a diameter greater than flanges 24, and forwardly located discharge end 34 which each register with the discharge ends 26 of the stuffing tubes. The flanges 32 all abut flanges 24 on the stuffing tubes. Sleeve 30A has a protruding annular ring 36 thereon within flange 32. Ring 36 is complimentary in shape to annular groove 28 on stuffing horn 14A (FIG. 2) and normally dwells with the groove 28 to yieldingly hold the sleeve 30A on the stuffing tube 14A. An elongated slot 38 (FIG. 2C) permits the plastic sleeve 30A to flex slightly so that the ring 36 snaps into groove 28 on tube 14A. (FIG. 2).

A brake element 40 is shown in FIGS. 4 and 5, and is pivotally mounted on frame 11 by means of pin 42 and bracket 44. A suitable power means (not shown) is adapted to cause brake element 40 to pivot between positions A and B as shown in FIG. 5. In position A, brake element will dwell behind flange 32 of the sleeves 30 and 30A and prevent the sleeves from moving longitudinally rearwardly when the stuffing tubes are withdrawn in a rearward direction at the completion of a sausage filling cycle. The withdrawal of the stuffing tubes from the sleeves allows the sleeves to drop into a suitable container (not shown) for further preloading with natural casings 46.

In operation, a plurality of casings 46 are preloaded on sleeves 30 or 30A. With the stuffing tubes 14 (or 14A) in their rearward or withdrawn positions of FIG. 1, the preloaded sleeves are slidably inserted over the forward ends of the tubes to assume the positions shown in FIGS. 1, 2 and 4. In the case of sleeve 30A, it is slightly flexed by means of slot 38 to permit annular ring 36 to snap into groove 28 to yieldingly retain the sleeve on the tube. If brake element 40 is used, it will normally be in position A so as to engage flange 32 on the sleeves, but not flange 24 on the stuffing tubes.

The forward ends 48 of casings 46 extend just beyond the formal discharge ends of the sleeves and tubes as shown in FIGS. 1, 2 and 4, and are closed in any convenient way (e.g., tie element 50). The closing takes place at or during pre-loading.

The stuffing tubes are then conventionally moved forward so that their discharge ends are adjacent linker 18. The pump 12 is then started to pump meat emulsion into and through the stuffing tubes. The pressure of the meat emulsion engaging the closed ends of the casings moves the casings off of the tubes into the twister 16. When the casing 46 finally departs the sleeves, the pump is stopped; and the stuffing tubes are withdrawn. The sleeves are either manually removed from the stuffing tubes (FIGS. 1 and 4), or are automatically removed through the above-described action of brake element 40. A new preloaded sleeve is then replaced on the stuffing tube, and the cycle repeats itself.

It is seen that the advanced preloading of sleeves will greatly speed up the process, as compared to inserting a casing on the end of a stuffing tube each time a casing is filled. This invention will therefore achieve at least its stated objectives.

We claim:

1. A method of stuffing natural casings with sausage emulsion, comprising,  
preloading each of the casings on an elongated hollow open ended sleeve shorter than the casings with the

sleeve having a first end and an open end which is of constant uninterrupted diameter between the first end and the open end and having diameter less than the casings by telescoping the casing on the outer surface of the sleeve, and extending an open end of the casing toward the open end of the sleeve,  
slidably mounting the sleeve over an open end of a meat stuffing tube of a sausage encasing machine,  
extruding meat emulsion through the stuffing tube into the casing mounted on the sleeve until the casing is slidably removed from the tube caused in part by the movement of meat emulsion entering the casing,  
repeating the use of the sleeve by preloading the sleeve with another natural casing, and  
sequentially filling the casing on the preloaded sleeve with meat emulsion in accordance with the foregoing steps.

2. A natural casing sausage making machine having a frame, a meat emulsion pump, and a hollow stuffing tube with an open discharge end for discharging meat emulsion from the pump, comprising,

a hollow open ended elongated sleeve with a first end and an open end which is of constant uninterrupted diameter between the first end and the open end and with a length shorter than the casings slidably mounted on the stuffing tube and having an open discharge end registering with the discharge end of the stuffing tube,  
the sleeve being preloaded with a natural casing having a diameter, the casing being in telescopic condition on the outer surface of the sleeve, and  
a radially extending flange adjacent one end of the sleeve to prevent the casing from sliding off that end of the sleeve.

3. The machine of claim 2 wherein a radial flange is on the sleeve at an end opposite its open discharge opening.

4. The machine of claim 3 wherein the stuffing tube has a stop element on its outer surface to engage the flange to limit the sliding action of the sleeve on the stuffing tube in one direction.

5. The machine of claim 4 wherein the stop element is positioned so that when it engages the flange the discharge openings of the sleeve and the stuffing tube register with each other.

6. The method of claim 1 wherein the stuffing tube is moved longitudinally to a twisting and linking station when a pre-loaded sleeve is mounted thereon, a brake element is moved into operative contact with the sleeve to hold it against longitudinal movement, and the stuffing tube is then longitudinally withdrawn from the sleeve to permit the sleeve to fall from supporting condition on the stuffing tube.

7. A natural casing sausage making machine having a frame, a meat emulsion pump, and a hollow stuffing tube with an open discharge end for discharging meat emulsion from the pump, comprising,

a hollow open ended elongated sleeve slidably mounted on the stuffing tube and having an open discharge end registering with the discharge end of the stuffing tube,  
the sleeve being preloaded with a natural casing having a diameter and length greater than that of the sleeve, the casing being in telescopic condition on the outer surface of the sleeve,  
a radially extending flange adjacent one end of the sleeve to prevent the casing from sliding off that end of the sleeve,

a stop element on the outer surface of the stuffing tube to engage the flange to limit the sliding action of the sleeve on the stuffing tube in one direction,

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the stop element being positioned so that when it engages the flange the discharge opening of the sleeve and the stuffing tube register with each other,  
a detent element interconnecting the sleeve with the stuffing tube to releasably connect the sleeve to the stuffing tube,  
the detent element being comprised of an annular groove extending around the outer surface of the stuffing tube with a detent element on the inner diameter of the sleeve to permit the detent element to releasably be inserted in to the annular groove, and  
an elongated slot on the sleeve and extending length of the sleeve to permit its diameter to be resiliently changed to facilitate the placement of the sleeve on the stuffing tube to accommodate the detent until the detent is located within the annular groove.  
8. A natural casing sausage making machine having a frame, a meat emulsion pump, and a hollow stuffing tube with an open discharge end for discharging meat emulsion from the pump, comprising,

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a hollow open ended elongated sleeve slidably mounted on the stuffing tube and having an open discharge end registering with the discharge end of the stuffing tube, the sleeve being preloaded with a natural casing having a diameter and length greater than that of the sleeve, the casing being in telescopic condition on the outer surface of the sleeve,  
a radially extending flange adjacent one end of the sleeve to prevent the casing from sliding off that end of the sleeve, and  
a brake element pivotally mounted on the machine and positioned to contact the sleeve to selectively hold the sleeve against longitudinal movement, and means on the machine for withdrawing the stuffing tube from the sleeve after the casing on the sleeve has been removed from the stuffing tube and filled with meat emulsion.

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